Journal of Dental Sciences 19 (2024) 659–660

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Trigeminal herpes zoster with multi-dermatome and temporomandibular joint involvement

Multi-dermatome trigeminal herpes zoster with (MTHZ) and temporomandibular joint (TMJ) involvement is an exceptional rare condition affecting immunocompetent individuals below the age of 50.[1] In this case, a 48-year-old male with chronic TMJ disorder (TMD) came to our oral and maxillofacial surgery clinic for diagnosis and treatment. He was experiencing acute throbbing pain, swelling in the left TMJ, and restricted mouth opening. His past medical history was unremarkable, but family history revealed both parents were affected by herpes zoster before. Moderate to high psychological stress (Cohen's Perceived Stress Scale of 21) was recorded. Physical examination revealed significant palpation pain in the left TMJ, reduced inter-incisal distance, and severe joint effusion (Fig. 1A). Subsequent vesicular rashes over the left lateral forehead, median forehead, glabella, superior palpebra, infraorbital, zygomatic cutaneous area, ala naris, upper cutaneous and vermillion border of the lip corresponded to the distribution of the left ophthalmic (V1) and maxillary (V2) dermatomes (Fig. 1B). Together with involvement of the TMJ (V3, articular branch of auriculotemporal nerve), this confirmed left-sided MTHZ affecting all three branches.

Treatment included oral famciclovir 500 mg three times a day, topical fusidic acid cream, cobamamide 250 mg four times a day, acetaminophen 500 mg and cataflam 25 mg four times a day. During the ophthalmological examination on the fourth days after prodrome, only swelling in the upper eyelid and conjunctival chemosis were observed in the left eye. Following the treatment, the vesicular rashes resolved after 2 weeks, but post-herpetic neuralgia persisted for 3 months.

Herpes zoster, or shingles, is caused by the reactivation of the varicella-zoster virus (VZV) in neurons of various ganglia. It usually affects a specific dermatome, but it can also spread to deeper tissues along the infected nerves. This case showed how the VZV reactivated in the left trigeminal ganglion and spread to the skin regions innervated by the first and second branches of the trigeminal nerve and to the temporomandibular joint (TMJ) via the third branch. Healthcare professionals should be aware of the potential impact of the infection on different target tissues throughout the body.[2]

Diagnosis of herpes zoster can rely solely on clinical examination, with a positive predictive value of 90.8 %.[3] Differentiating between TMD and MTHZ with TMJ involvement can be challenging, but certain characteristics can help distinguish between the two conditions. MTHZ typically presents with unilateral symptoms, including sudden onset of intense TMJ pain with a distinct trigger point, along with accompanying facial background pain. Monitoring individuals with acute, severe, and unilateral TMD-like symptoms for 3–5 days can aid in early detection of herpes zoster and facilitate prompt treatment.

The risk factors for herpes zoster include family history (genetics), psychological stress, old age, physical trauma, female gender, and immunocompromised status.[4,5] In this case, patient had two of these risk factors and is therefore at a high risk. It is important for healthcare professionals to recognize these factors to provide effective treatment and guide the evaluation of severe TMD symptoms and suspected herpes zoster.

https://doi.org/10.1016/j.jds.2023.10.023

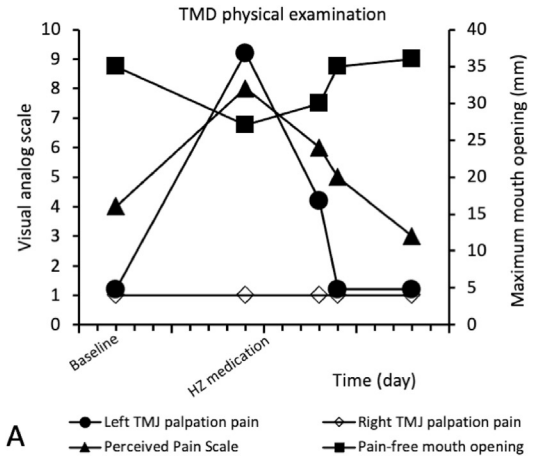

Fig. 1 Longitudinal temporomandibular joint disorder (TMD) physical examination and clinical picture of the patient. (A) The longitudinal TMD physical examination revealed that the background pain (perceived pain scale) reached its peak on the last day of the herpes zoster (HZ) prodrome. The patient also experienced severe left TMJ palpation pain and limited mouth opening at that time. A vesicular rash appeared a day later and the patient received HZ medication. The pain and mouth opening improved significantly after starting the HZ medication. These findings confirmed that HZ affected the articular branch of the left auriculotemporal nerve (V3)·(B) Vesicular rash on the fourth day following HZ prodrome. The vesicular rash appeared over the left lateral forehead, median forehead, glabella, superior palpebra, infraorbital, zygomatic cutaneous area, ala naris, upper cutaneous and vermillion lip. This distribution pattern indicates the involvement of both the trigeminal ophthalmic and maxillary branches. Combining A and B, this represents a case of trigeminal herpes zoster involving all three branches.

Declaration of competing interest

The authors have no conflicts of interest relevant to this article.

Acknowledgements

The author thanks Dr. Luo Xinhong for helping to apply for IRB certificate. Sincere thanks are extended to the Chang Gung Medical Foundation Institutional Review Board for granting us permission to report the case (IRB No.: 202301491B0). Furthermore, we express our profound appreciation to the patient who willingly provided his informed consent, making us to publish this medical paper.

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Received 18 October 2023
Final revision received 19 October 2023
Available online 15 November 2023